

WHAT IS CLAIMED IS:

1. A method for scheduling work and delivery of material for mass-producing items in a factory comprising:
obtaining at least one outstanding customer order, wherein each outstanding customer of the at least one outstanding customer order includes an item ordered by a customer, and producing the item requires a required quantity of a required material;
determining a current state of an available inventory of at least one material from a plurality of material sources; and
periodically generating a work schedule and a material delivery schedule for producing the item using the at least one outstanding customer order and the current state of the available inventory, wherein
the determining the current state of the available inventory is performed such that the determining the current state of the available inventory is completed immediately prior to the generating the work schedule and the material delivery schedule; and
the obtaining the at least one outstanding customer order is performed such that the obtaining the customer order is completed immediately prior to the generating the work schedule and the material delivery schedule.

2. The method of claim 1 wherein
the at least one outstanding customer order and the current state of the available inventory are posted continuously for the generating the work schedule and the material delivery schedule.

3. The method of claim 1 wherein
the at least one outstanding customer order and the current state of the available inventory are posted continuously to an automated data warehouse.

4. The method of claim 1 wherein the determining the current state of the available inventory includes determining for each material of the at least one material of the available inventory:
a material source of the plurality of material sources from which the material can be obtained, wherein the material source is updated continuously;

an available quantity of the available material at the material source, wherein the available quantity is updated continuously; and
an availability time of the available quantity of the material at the material source to each operation of at least one operation of each manufacturing line of at least one manufacturing line of the factory, wherein the availability time is updated continuously.

5. The method of claim 1 wherein the obtaining the at least one outstanding customer order includes using a status for each customer order of at least one customer order, wherein the status for each customer order is updated continuously; and
the status for each outstanding customer order corresponds to an outstanding status.

6. The method of claim 1 wherein the available inventory comprises external inventory.

7. The method of claim 1 wherein the available inventory comprises work-in-progress inventory.

8. The method of claim 1 wherein the available inventory comprises in-transit inventory.

9. The method of claim 1 wherein the available inventory comprises in-house inventory.

10. The method of claim 1 wherein the periodically generating the work schedule and the material schedule includes generating the work schedule and the material delivery schedule every two hours.

11. The method of claim 1 wherein a manufacturing shift comprises a number of hours less than or equal to eight; and
the periodically generating the work schedule and the material schedule includes generating the work schedule and the material delivery schedule a plurality of times during the manufacturing shift.

12. The method of claim 1 wherein

2 the plurality of material sources comprises an external material source, the external material
3 source providing an external inventory of a first material of the at least one material of
4 the available inventory; and
5 the determining the available inventory of the material includes using an external visibility
6 interface module to determine the available inventory of the first material in the
7 external inventory.

1 13. A computer system comprising:
2 a processor; and
3 a memory, the memory comprising instructions, the processor for executing the instructions,
4 the instructions comprising:
5 obtaining instructions for obtaining at least one outstanding customer order, wherein
6 each outstanding customer of the at least one outstanding customer order
7 includes an item ordered by a customer, and producing the item requires a
8 required quantity of a required material;
9 determining instructions for determining a current state of an available inventory of at
10 least one material from a plurality of material sources; and
11 generating instructions for periodically generating a work schedule and a material
12 delivery schedule for producing the item using the at least one outstanding
13 customer order and the current state of the available inventory, wherein
14 the determining the current state of the available inventory is performed such
15 that the determining the current state of the available inventory is
16 completed immediately prior to the generating the work schedule and
17 the material delivery schedule; and
18 the obtaining the at least one outstanding customer order is performed such
19 that the obtaining the customer order is completed immediately prior to
20 the generating the work schedule and the material delivery schedule.

1 14. The computer system of claim 13 wherein the determining instructions further
2 comprise:
3 source determining instructions for determining for each material of the at least one material
4 of the available inventory a material source of the plurality of material sources from
5 which the material can be obtained;
6 source updating instructions for updating the material source continuously;

7 quantity determining instructions for determining for each material of the at least one
8 material of the available inventory an available quantity of the available material at
9 the material source;
10 quantity updating instructions for updating the available quantity continuously;
11 time determining instructions for determining for each material of the at least one material of
12 the available inventory an availability time of the available quantity of the material at
13 the material source to each operation of at least one operation of each manufacturing
14 line of at least one manufacturing line of the factory; and
15 time updating instructions for updating the availability time continuously.

1 15. The computer system of claim 13 wherein the obtaining instructions further
2 comprise:
3 status instructions for using a status for each customer order of at least one customer order to
4 obtain the at least one outstanding customer order, wherein the status for each
5 outstanding customer order corresponds to an outstanding status; and
6 status updating instructions for updating the status continuously.

1 16. A automated data warehouse comprising:
2 a current state of available inventory; and
3 at least one outstanding customer order.

1 17. A automated data warehouse comprising:
2 a current state of available in-house inventory;
3 a current state of in-transit inventory;
4 a current state of work-in-progress inventory;
5 a current state of external inventory; and
6 at least one outstanding customer order.

1 18. A computer readable storage medium comprising computer instructions for:
2 obtaining at least one outstanding customer order, wherein each outstanding customer of the
3 at least one outstanding customer order includes an item ordered by a customer, and
4 producing the item requires a required quantity of a required material;
5 determining a current state of an available inventory of at least one material from a plurality
6 of material sources; and

7 periodically generating a work schedule and a material delivery schedule for producing the
8 item using the at least one outstanding customer order and the current state of the
9 available inventory;
10 determining the current state of the available inventory such that the determining the current
11 state of the available inventory is completed immediately prior to the generating the
12 work schedule and the material delivery schedule; and
13 obtaining the at least one outstanding customer order such that the obtaining the customer
14 order is completed immediately prior to the generating the work schedule and the
15 material delivery schedule.